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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
Larta Institute

National Institutes of Health Commercialization Assistance Program (NIH-CAP)

Company Profile

Industry Sector: Advanced scientific instrumentation; Medical devices

Company Overview: Aerodyne Research, Inc. (ARI) has provided R&D services to commercial and government clients working to solve national and international problems since 1970. Aerodyne designs, builds and utilizes remote sensing, image processing, and monitoring instruments for environmental, industrial, and national defense applications. It is an international leader in the development, utilization and commercialization of real-time, high sensitivity instrumentation for environmental, energy, and medical applications. In FY2009 ARI commercial sales of advanced research instruments produced revenues of $7.8M.

Target Market(s): Pulmonology clinics, hospitals, medical research groups

Key Value Drivers

Technology*: Aerodyne Research's breath analyzer, a novel laser based instrument for the study of respiratory diseases and other exhaled biomarkers, builds on our expertise in developing sensitive trace gas monitors for environmental and industrial applications. Mid infrared spectroscopy is utilized to detect multiple volatile exhaled breath components. With subjects exhaling at target exhalation flow rates, nitric oxide, carbon dioxide, carbon monoxide and nitrous oxide are simultaneously measured, monitoring the state of disease and effectiveness of treatment.

Competitive Advantage: The ARI breath analyzer, a multispecies detector with immediate response and high sensitivity utilizes ARI's patented astigmatic multipass sampling cell and copyrighted TDLWintel software. It delivers real-time absolute measurements without the need for calibration gases. It has been operated by nurses at pulmonary and pediatric clinics for over a year, demonstrating its reliability, ease of use, and standard operational deployment. Fast time response and testing with variable flow rates can be exploited for research in the pulmonary sources of breath components (i.e., airway versus alveolar) and their roles in respiratory diseases.

Plan & Strategy: First commercialize for biomedical research; then identify strategic partner to help tailor instruments for clinical applications.

*Technology funded by the NHLBI and being commercialized under the NIH-CAP

Management

Leadership:
Charles E. Kolb, PhD, President and CEO
George N. Wittreich, Chief Financial Officer
David D. Nelson, PhD, Vice President of Operations
Joanne H. Shorter, PhD, Principal Scientist

Scientific Advisory Board:
NA
Leadership team includes three PhDs with a total of 80 years experience in the development, utilization and commercialization of advanced laser spectroscopic instrumentation.

In addition, we received biomedical input from our project collaborator:
Donald Milton, MD/PhD, Director, Maryland Institute for Applied Environmental Health, Univ. Maryland, College Park

Product Pipeline

ARI Breath Analyzer

Biomedical research instrument
Status: developed, demonstrated; ready for sale to biomedical research groups.

Clinical application instrument
Status:
a) Instrument in development. Prototype has been successfully used by medical staff in clinic based study for over a year.
b) Market research initiated.
c) Identification of potential strategic partners for clinical applications underway.